

Master dissertations

Product Development

Product Development Master programme | University of Antwerp



www.uantwerp.be

mastering product innovation

The Bachelor and Master programmes in Product Development aim to help students increase their interest, skill and enthusiasm in developing new products for new markets. They learn about today's flexible market and changing society, with its new technologies and needs, and learn to back their developments up with scientific knowledge and research. They also learn to steer the innovation process strategically and creatively, and their sense of entrepreneurship is stimulated. They learn about all of the phases of a comprehensive product development process methodically. In this way, they master the skills needed for product innovation which has the right dynamics for our economy and society.



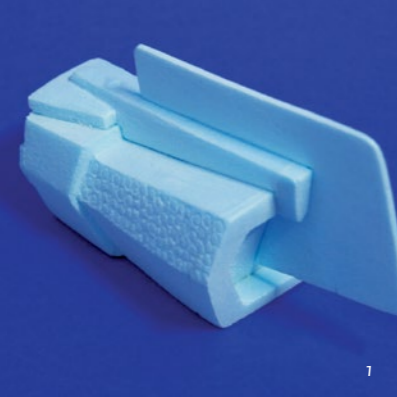


masters for all markets

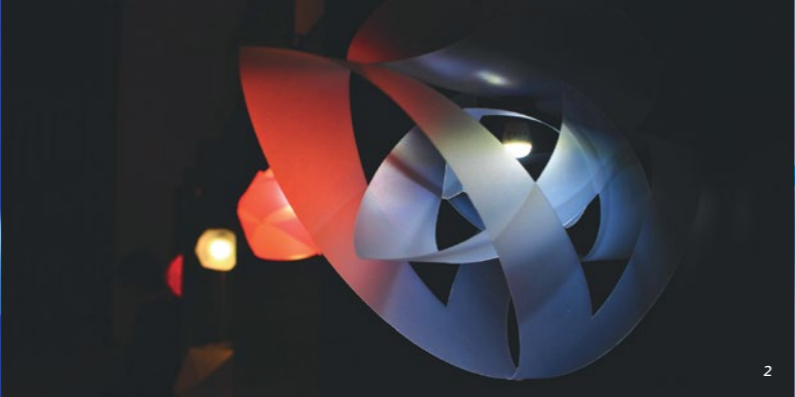
Having a Master in Product Development means our students are highly qualified partners for companies, public authorities and knowledge institutions that want to develop innovative products, services or product/service combinations. Our students are ready to function at various levels within an organisation where innovation plays a role:

- As industrial designers, they give shape to new products
- As product developers, they are the driving force behind innovation processes, taking strategic decisions for the products and the company
- As trend-conscious, market-sensitive and user-centred innovation specialists, they position the right products in the right markets
- As creative entrepreneurs, they create their own companies or design offices that are able to grow thanks to the quality of their approach and innovative products
- As scientific researchers, they add knowledge to the field of product development





1



2



3

structure of the programme

In the first and second Bachelor years, Product Development students become acquainted with the complexity of product design by means of a methodological, interdisciplinary approach. Naturally, the assignments in the first Bachelor year are less complex and mainly focus on smaller aspects of product development, such as shape, material, production techniques, colour and so on. Subsequently, the knowledge, methods and techniques are used in design assignments covering the broader field of product development. During the final Bachelor year, all design assignments require an integrated approach and rely heavily on cooperation with the industry. During their Bachelor years, students discover and explore all facets of scientific and applied research.

During the first Master year, students learn to define design problems themselves and to organise and improve the entire product development process. In the second year of the Master programme, students prove that they have mastered the integrated design process and that they can conduct applied research as part of this process. They achieve their Master dissertation by developing a clearly defined, innovative product or by conducting research within the field of product development.



4



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6

Illustrations (left and below)

First Bachelor year in Product Development:

1) Form and aesthetics 2) Product and materialisation 3) Form and history

Second Bachelor year in Product Development:

4) Mechanical designs 5) Sustainable design: air freshener

6) Product and ergonomics

Third Bachelor year in Product Development:

7) User-centred design: headphones that convert into speakers

8) Structural design 9) Bachelor dissertation

10-11-12) First Master year in Product Development

13-14-15) Second Master year in Product Development: Master dissertation



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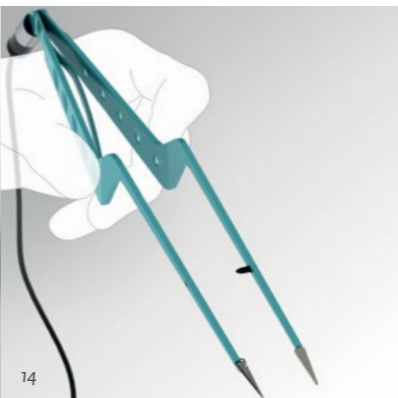
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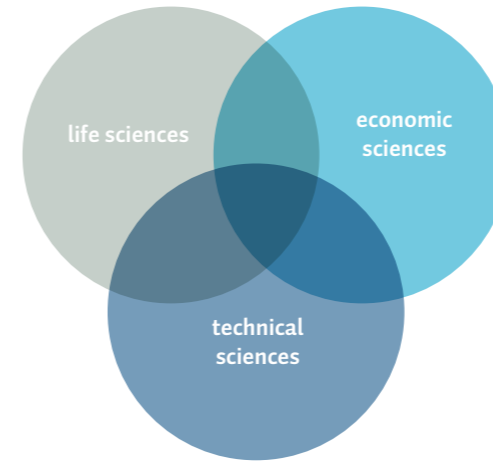
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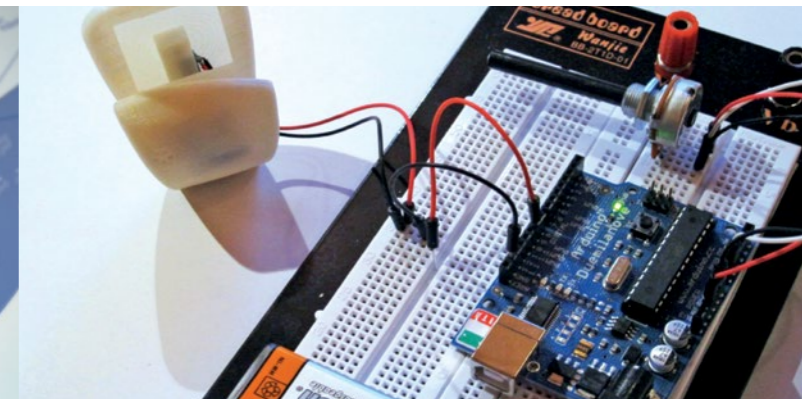
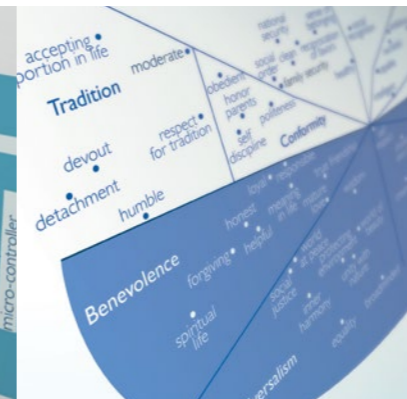
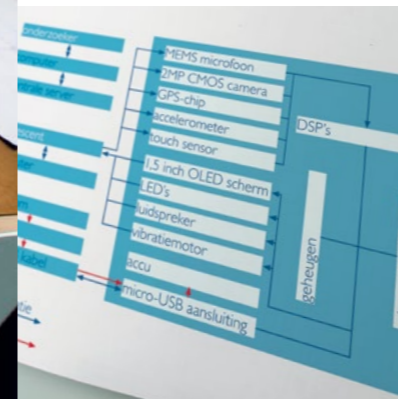
bridging the gap between science & society



A good product is based on knowledge from different fields of science. When developing an innovative product, the product developer integrates knowledge from technical, economic and life sciences. This integrated approach results in products which have proven added value, time and time again. That is why the Master programme in Product Development takes a highly multidisciplinary approach. The various scientific pillars receive equal attention during the programme and the creative process is guided by cutting-edge design methodologies.

Our students can detect opportunities and design problems and assess the feasibility of solutions. They have the knowledge, attitudes and skills needed to capitalise on opportunities and solve problems effectively. For example, they conduct market analyses to determine whether there is room for their new product, or carry out user surveys to verify that the look and feel of the product meets the requirements identified. New technologies are carefully considered to determine whether they are suitable for an innovative and user-friendly application. Production techniques are selected depending on both their economic and ecological impacts.

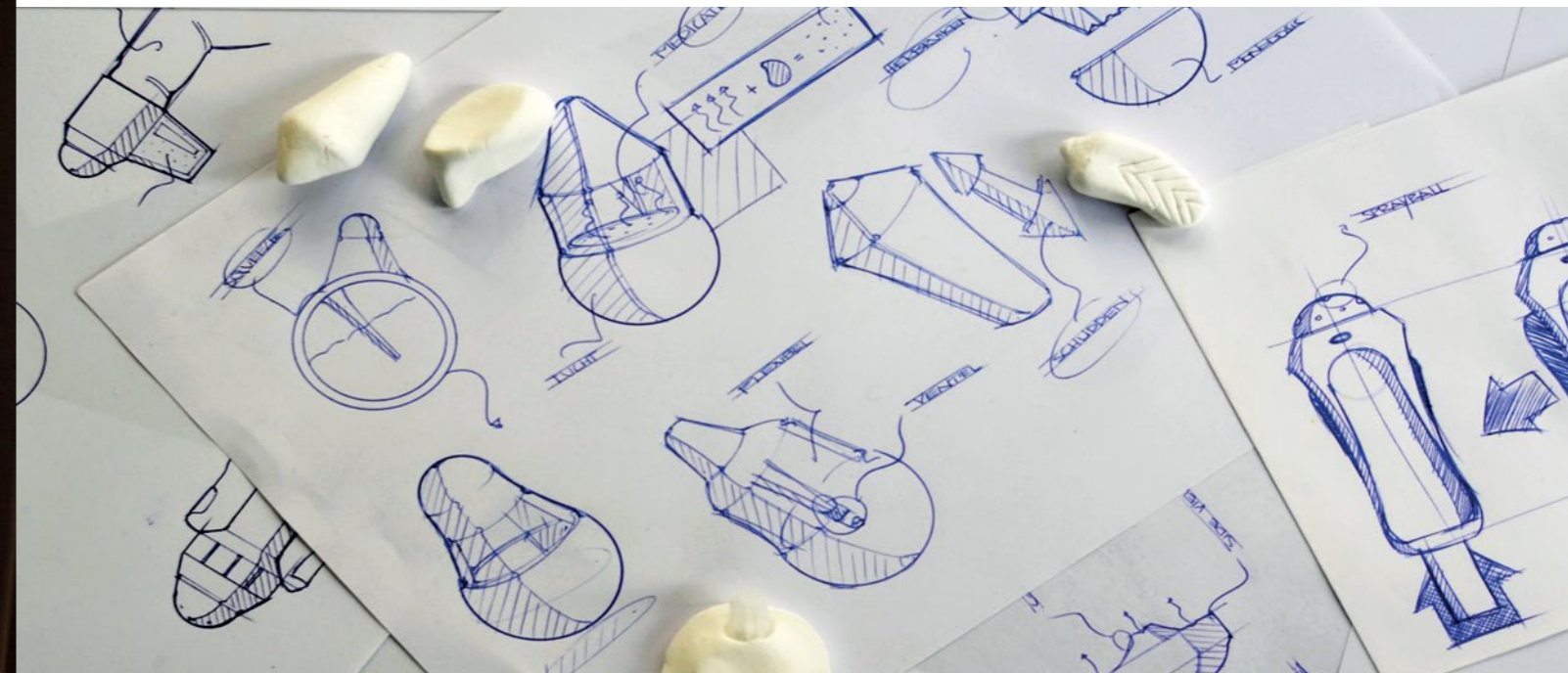
In today's knowledge society, scientific knowledge is an important economic engine. The product developer plays a central role in transferring that scientific knowledge to the market and to society as a whole and, conversely, in translating human and societal needs and desires into scientific research.





graduating with a Master dissertation

Our students become Masters in Product Development after intensive and thorough training that consists of three Bachelor years and two Master years. In their Master dissertations the students show that they can generate innovative product ideas which have demonstrable value for users and clients in the industry, public sector and research community. As a result, our Master students always collaborate with external supervisors who support them with their enthusiasm, know-how and expertise. In this process, the supervisor is given the opportunity to investigate the feasibility of innovation projects in the early stages. Product design concepts made by students give the supervisors a clearer idea of the potential outcomes of the innovation and of whether valorisation may be profitable.



Taste exploration is a crucial phase in the development of healthy and varied eating habits. HAP involves children in food preparation and offers encouragement during meals, thereby increasing their acceptance of new tastes and textures. Parents are supported by the provision of more inspiration in the kitchen and by the tracking of information on their child's development. The **HAP Application** thus supports the parent by keeping track of the child's development and by providing a database of recipes. The **HAP Platform** shows the different stages of the recipe and functions as a cutting board, kitchen scales and timer. The **HAP Cube** responds to information with animations matched to the operation and ingredient, and also changes colour to match the ingredient.



Margaux Verbist
 supervisor: Johan Neyrinck
 industrial supervisor: Elodie Thomas
 Mother & Child care Philips AVENT

HAP

fun and challenging
 food exploration experience
 for children and parents

 NOMINATION
 BEST OF PO
 2013



Monodo is a novel applicator for treating otitis externa, an inflammation of the skin in the outer ear canal, and is designed to replace ear drops. Monodo is a nebuliser that packs each dose of the medication into a disposable capsule. Three capsules are then packed together as a day strip. The output of Monodo is a mist that moves through the ear canal and adheres to the skin. Monodo increases therapy adherence, improves user comfort and provides precise and independent dosing while also preserving hygiene.

Ornella Poponcini
 supervisor: Dr. Alexis Jacoby
 industrial supervisor: Didier De Chaffoy,
 OTO Therapeutics

Monodo

improved treatment
 of ear conditions

 WINNER
 BEST OF PO
 AWARD 2014

WINNER
 USER EXPERIENCE
 AWARD 2014



RAY is a modern magic lantern for children aged between 3 and 6 which sheds new light on their world. It is a game platform involving projection that allows them to explore fantasy worlds. They can use the camera to play with images and video communication. RAY transposes the possibilities of modern technology onto the children's own world. A portable console which fits snugly into a child's hand, RAY starts up when the eye at the front is opened. Inserting a game or object into the back makes it appear as though the object has been pushed into the beam of light. The games can be developed very freely and creatively. If the console is placed on the floor, it can be used to project dances or games onto the wall for the entire family. RAY also enables children to play with each other or their families remotely. Once a video link is established between two players, the games can begin.



Thomas Michiels
supervisors: Dr. Achiel Standaert
& Drs. Lukas Van Campenhout
industrial supervisor:
Margot Vanderlick, Lilliputiens

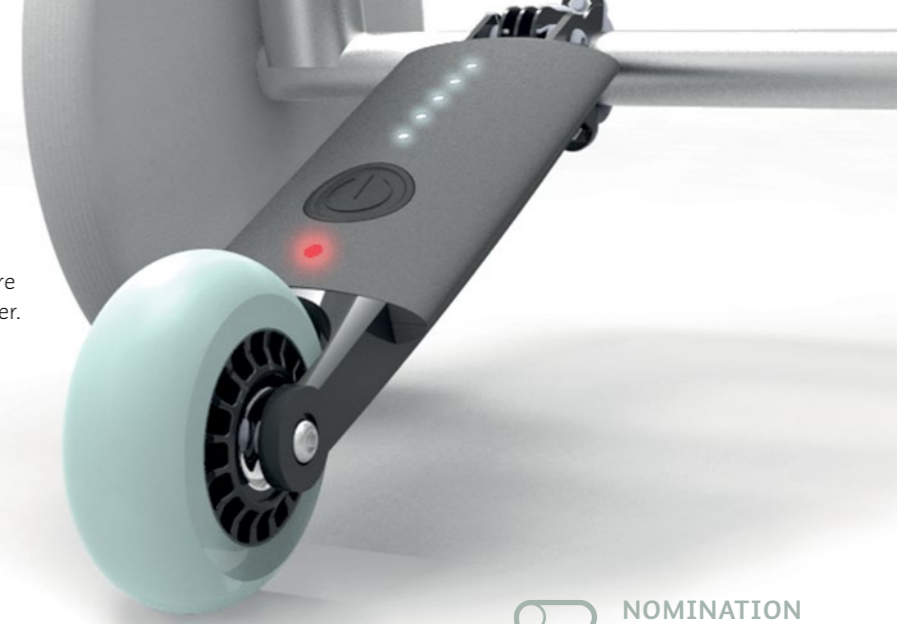
RAY

interactive
magic lantern
for **children**

 NOMINATION
BEST OF PO
2014



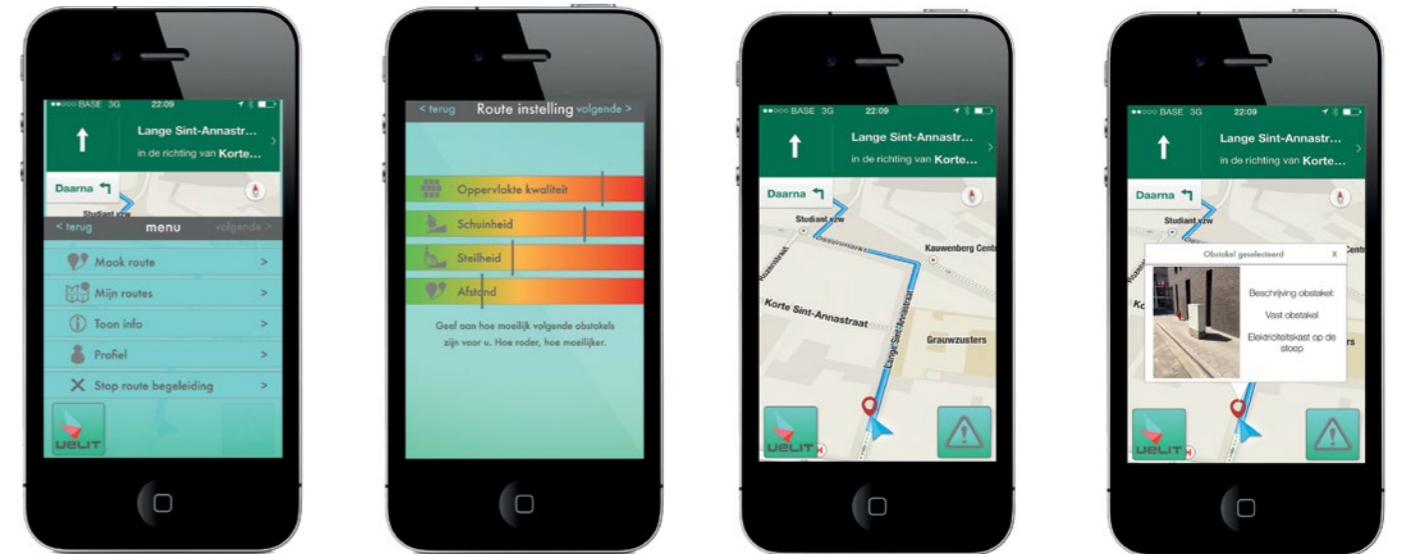
Velit is a smartphone app designed specifically for wheelchair users which indicates the most wheelchair-friendly means of getting from A to B. Taking potential obstacles and individual needs into account, the app helps wheelchair users to avoid physical fatigue and frustration and also to feel more secure while moving around. Potential obstacles are mapped using accelerometers, a gyroscope and a GPS receiver. The details recorded include surface quality, the slope of the pavement and the steepness of inclines. Temporary obstacles, such as road works, are included in the system using open data platforms. One drawback of accelerometers is that many measurements are needed in one section of a street before statements can be made about its accessibility. For this reason, the designer worked with the Belgian postal service, BPost, and attached the measuring device to a postman's trolley. As a result, measurements were carried out every day throughout the city, providing reliable and complete data.



 NOMINATION
BEST OF PO
2014

wheelchair-friendly navigation system **Velit**

Remi Schoenmakers
supervisor: Chris Baelus



La Florajo is a new type of compression bra which can be worn by women as a preventive measure after breast-conserving surgery. The bra aims to prevent the development of breast oedema, a condition that occurs in the breast when fluid can no longer travel through the lymphatic system due to damage. The skin begins to swell, causing localised pain. Breast oedema usually develops after breast-conserving surgery and tends to occur in the spot where the tumour was located. Applying counterpressure can help prevent breast oedema from developing. The multi-layered system of La Florajo makes it possible to apply pressure in a tailor-made way and thus provide the required compression for each patient. The added value of this bra is its combination of medical and aesthetic concerns.



© Foto Laenen

Els Cassauwers
 supervisor: Linda Scheelen
 co-supervisors: Nick Gebruers
 & Steven Truijen

bra designed to prevent
 breast oedema

La florajo

NOMINATION
 BEST OF PO
 2014



Children are playing with digital toys from an increasingly young age. But interaction with these toys is totally different from normal play interaction: children have to push buttons and touch screens during games and no physical play is involved whatsoever. With the Interactive Music Puzzle, we tried to integrate the digital world in the physical environment in order to enrich interaction. The aim is to stimulate children even more and enrich their game experiences. In the design, musical parameters are represented by physical elements. For example, the white discs behave like half notes while the black discs behave like whole notes. Sounds are represented by rings, which can be placed in the section above the turntable. The tempo is directly related to the turntable's movement: it can be altered by turning the handle on the side of the puzzle.



NOMINATION
 BEST OF PO
 2014

Marieke Van Camp
 supervisors: Paul Bailleul
 & Drs. Lukas Van Campenhout
 industrial supervisor:
 Margot Vanderlick, Lilliputiens



Interactive Music Puzzle

This project included the development of a concept for collecting first-void urine and separating it from midstream urine in a user-friendly manner. This fraction of urine contains genetic material that enables the detection of sexually transmitted infections. In this way, invasive sampling is avoided and, thanks to DNA preservation techniques, it is possible to collect the urine in a familiar environment. The product's dimensions mean it can be sent through the post. The user process includes three phases (the three Ps):

Prepare

The user screws the test tube into the product and then pushes the green clip at the back. This changes the product from its transport dimensions (30mm) to ergonomically determined dimensions for use (60mm).

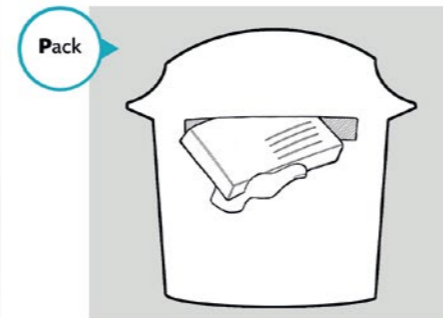
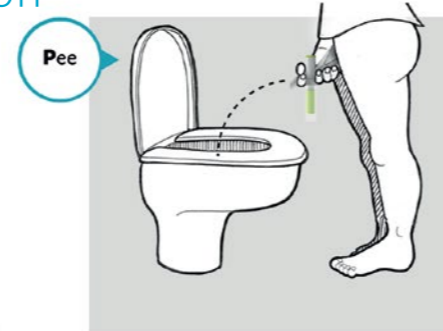
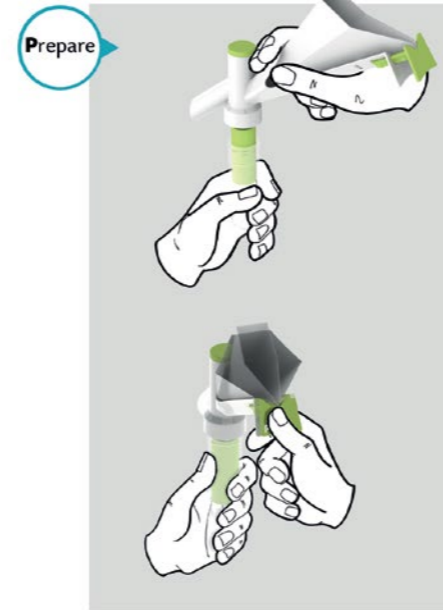
Pee

Both men and women collect their urine standing up.

Pack

To return the urine sample in the post, it must be placed in a watertight bag with absorbent wipes.

· The project was carried out as part of a multidisciplinary collaboration (BiR&D 2012-2013).



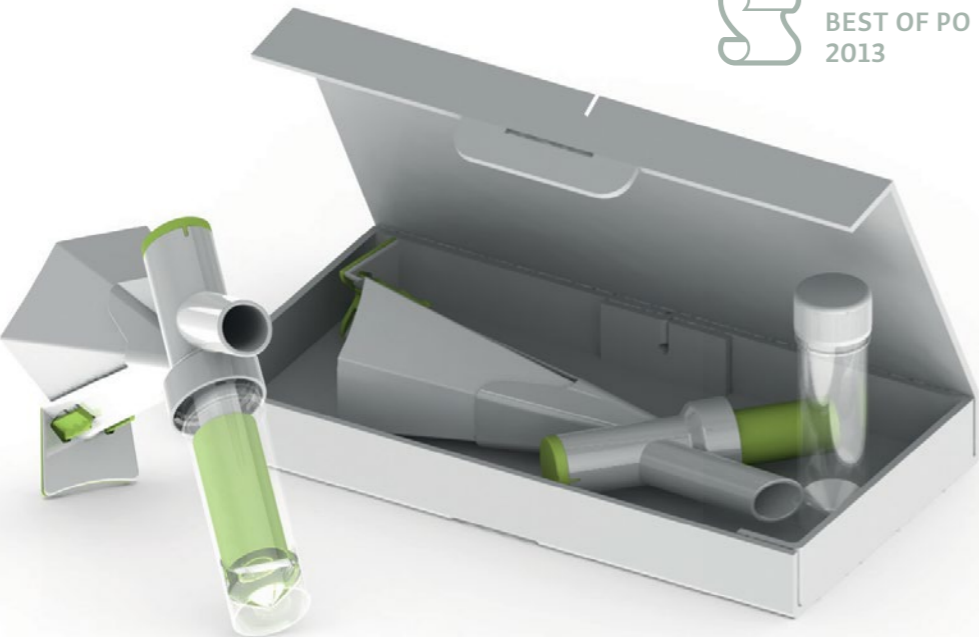
2pi urine collection device



WINNER
BEST OF PO
2013

Hanne De Bauw

supervisor: Chris Baelus
industrial supervisor: Koen Beyers, Voxdale
co-supervisors: Vanessa Vankerckhoven
& Alex Vorsters, Vaxinfectio



12PM is an innovative shoe brand producing comfortable high heels for women. 12PM shoes contain a comfortable insole that supports the foot correctly. This reduces the fatigue and soreness caused by wearing elegant heels, a problem that many women are familiar with! Research shows that these problems are mainly caused by foot instability and poor fit. The innovative 12PM shoe includes a supporting insole that is inserted separately. This insole consists of three supportive points specifically chosen to provide enough support for the forefoot. In addition, it secures the heel to prevent sprains.

support and alternative sizing for heels

To provide more individual comfort, the brand has its own innovative measurement system that categorises the foot based on width, length and support dimensions. Two different width sizes and three different support sizes are available, leading to even more accurate support and fit.



12PM



Annelies Claeskens
supervisor: Linda Scheelen
industrial supervisor: Patrick Creemers,
Orthopedie Creemers



Hospitals should be places of healing and rest, but they actually cause anxiety and stress in many children. Stress reduces immunity, increases the risk of disease and intensifies feelings of pain. Particularly in child cancer patients, who already have low immunity and are at high risk of infection, stress can be a decisive factor. Re-leaf continuously measures stress and offers children various

techniques and therapies for tackling stress at just the right time. Medical staff also receive additional information so they can intervene when necessary. This way, Re-leaf is able to shorten stays in hospital and the duration of procedures. This is important for the healing process, and also enables hospitals to save money.

Roman Plaghki
supervisor Chris Baelus
industrial supervisor: Elke Daemen, Philips Research

Re-leaf

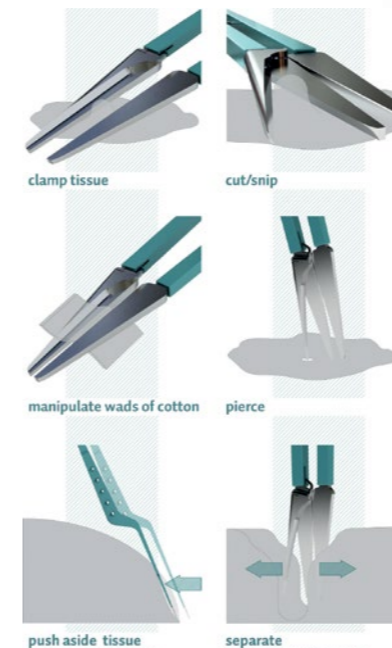
 **NOMINATION
BEST OF PO
2011**



The Neurobi is a combination of the two most commonly used instruments in microneuro-surgery (bipolar micro-tweezers and micro-scissors). When operating today, surgeons very often have to switch between these two instruments. While this is clearly time-consuming and exhausting for the surgeon, there is also a certain risk involved with constantly inserting and extracting these instruments. The Neurobi enables surgeons to avoid switching instruments and optimises the overall quality of the procedure. Both original instruments are used for much more than just cutting and coagulating. Bipolar micro-tweezers are used to clamp tissue, push it aside and manipulate wads of cotton. A pair of micro-scissors can pierce brain tissue, separate it and snip at it in order to get through it slowly. All of these manoeuvres are also possible with the Neurobi, which has the same feel to it as existing microneuro-surgical instruments.

Neurobi

combination micro tweezers
& micro scissors



 **WINNER
JAMES DYSON
AWARD 2013**

**WINNER
USABILITY
AWARD 2013**



Manon Vercammen
supervisor: Frank Goethijn
external supervisor: Dr. Tomas Menovsky, UZA

The MTDU is a mobile lab for tuberculosis screening carried out with the help of Gambian pouched rats. Tuberculosis remains one of the most deadly infectious diseases worldwide. Only HIV/AIDS and malaria kill more people. The mobile unit will be deployed in areas with a high incidence of tuberculosis, and therefore play a part in the fight against the disease. The unit was commissioned by APOPO, a Belgian NGO which specialises in the training of giant pouched rats. These rats are used in the detection of land mines and tuberculosis. APOPO is currently conducting tuberculosis screening in two locations, namely near their head office in Morogoro, Tanzania, and at a secondary branch in Maputo, Mozambique. The MTDU is a response to the organisation's need to develop a mobile service which will enable them to target more people.



Lisa Leenders & Evi Vandendriessche
 supervisor: Jan Van Goey
 co-supervisor: Prof. Dr. Mic Billet, APOPO

MTDU

mobile
 tuberculosis
 detection
 unit



In current bike sharing systems, which have been popular for quite some time, users can rent bikes to cover short distances between one bicycle station and the next. The systems contribute to reductions in emissions and traffic congestion in and around city centres. Smartbike 2015 is a product concept which integrates a number of new features in Clear Channel's Smartbike programme: a new type of bike with electric pedal assistance and improved ease of use, improved infrastructure that requires no implantation, and an interface for a smartphone application that includes the possibility of booking a bike in advance.

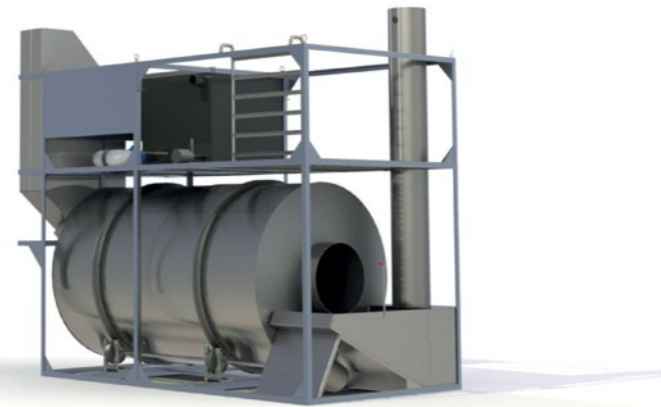


Smartbike 2015

Fabian Breës
 supervisor: Paul Bailleul
 industrial supervisor: Luc Lebon, Blue Corner



This design comprises an installation that makes it possible to compost organic waste on site. The installation is designed for recycling centres and is located underground. Optimizing all aspects of the composting process means it can be accelerated: by removing moisture through the air, the volume can be reduced by up to 90% in just a few weeks' time. The air sucked in passes through a biofilter in order to avoid bad smells. The installation is modular and constructed from stainless steel, which guarantees a long service life.



Jeroen Op de Beeck
 supervisor: Paul Bailleul
 external supervisor: Luc de Rooms, City of Antwerp

Urban composter



FLINK is a new chilled transport system for vaccines, primarily designed for outreach immunisation in developing countries. To remain effective, vaccines must be stored at a temperature of between 2°C and 8°C, which can be a problem for outreach immunisation projects in developing countries. Because of climate conditions and a lack of money and expertise, local health care providers often fail to ensure appropriate storage temperatures. FLINK helps outreach vaccination projects to stick as closely as possible to the ideal scenario, regardless of experience and environmental factors. This helps keeps waste to a minimum.



Tibo Grandry
 supervisor: Jan Van Goey
 external supervisors: Vanessa Vankerckhoven & Koen Beyers, Novosanis



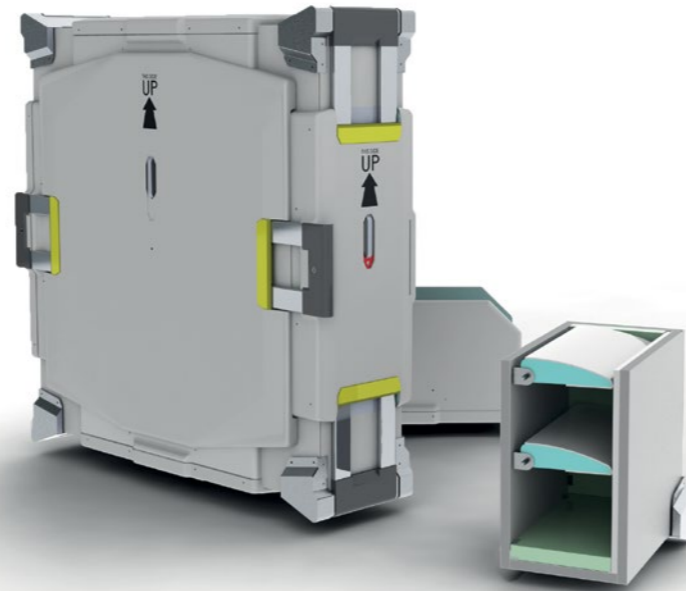
FLINK

transport system for vaccines



ArtShield focuses on the problems of moving paintings safely. Today, paintings are often transported in custom-made wooden boxes. ArtShield is an industrially produced alternative that makes it possible to transport paintings of different sizes. Using this concept, works of art can be packed vertically inside the exhibition space. The box is made up of overlapping modules, which makes it reusable. The sandwich structure which forms the box results in a lighter overall weight and also protects against sudden temperature changes that could damage the painting. ArtShield can be assembled in advance without tools or measurements. The box is built up around the work itself from the bottom up, on site. During storage, the box can be reduced in size to save space.

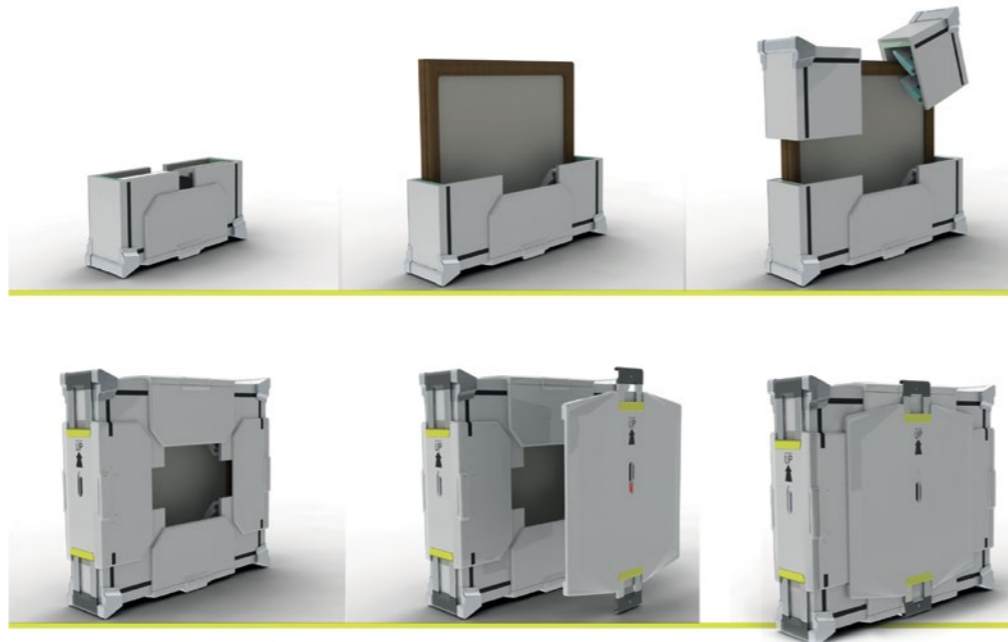
Dana Verstringe
 supervisor: Paul Bailleul
 external supervisors: Mario Festjens, Mobull & Veerle De Meester, KMSKA



ArtShield transporting paintings

WINNER
 PACKAGING
 AWARD 2013

ArtShield is composed of ten modules. Four modules protect the corners, while two modules protect the top and bottom. The side modules prevent direct pressure being applied to the frame of the painting and two final modules turn the box into a single structure. Because these modules are produced in different sizes, it is possible to transport paintings with dimensions of anything between 44 cm and 168 cm.

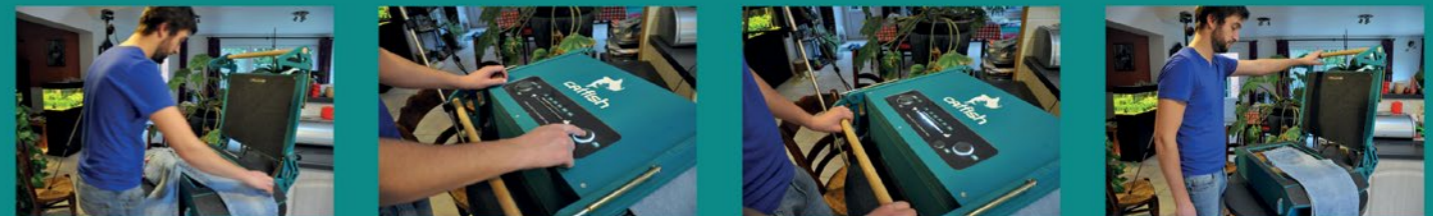


This project focuses on the problem of cleaning very dirty workwear at home, in the households of SMEs and self-employed persons working in construction, agriculture and horticulture. Dirty workwear can be a real challenge for household washing machines, causing them to wear faster or become damaged beyond repair. Therefore, it is essential to pre-treat heavily soiled workwear to remove mortar, bits of plaster, fine grinding dust, mud stains, etc. This pre-treatment is currently done by hand and is a particularly dirty and time-consuming job. The HDLA is a device with oscillating brushes and an integrated dust collection system that performs the pre-treatment more efficiently and thoroughly, so that workwear can be washed together with normal clothing. This provides dramatic improvements: cost savings thanks to the longer lifespan of the washing machine and decreases in water, electricity and detergent consumption because the clothes no longer need to be washed separately and require less intensive washing programmes to get the same results. These improvements are achieved with minimal effort, i.e. without making major changes to existing washing infrastructure or washing habits.



Heavy Duty Laundry Aid

Ward Vancoppenolle
 supervisor: Jan Van Goey
 external supervisor: An Vercalsteren, VITO



Dennis Scheyvaerts
supervisor: Paul Bailleul
industrial supervisor: Lieven Spincemaille, Eternit

Easy Slate

creating
architectural
added value
with slates

Easy Slate simplifies the work of slaters so that they can work faster, more efficiently and more accurately. This will save the slater many hours of work in comparison to the current method. Using this concept, clients can customise the visible outer shell of a building to their liking. Easy Slate abandons the current method of laying slates and opens up possibilities for the designer of a building's outer shell. One of the strengths of this product is that the visible area of the slate can be adjusted to between 25% and 85% of its length. This system guarantees full double coverage over the entire surface, preventing rainwater from penetrating the underlying layer should the visible slate break.



Africa alone is home to one billion people. A population explosion of 50% is expected in just 15 years' time, meaning the food supply will need to increase accordingly. Baridi, a mobile climate chamber for preserving fruits and vegetables in developing countries, was designed to help solve this issue. Currently, 40% of crops are lost before they reach the customer due to the lack of a cold chain protecting the products from environmental factors every step of the way. Thanks to the new concept of evaporative cooling, these losses are reduced to 5%, tripling profits. Baridi can also be attached to a local pedicab, enabling it to be used on the market as a sales display.



WINNER
JAMES DYSON
AWARD 2012

Baridi

Storing fruit
and vegetables
in Sub-Saharan
Africa

Arne Pauwels
supervisor: Jan Van Goey

WINNER
ECODESIGN
AWARD 2013



MuTone was developed to enable objective mapping of muscle tone. Currently, when assessing the state of a muscle, physiotherapists rely on tactile measurements and patient feedback. MuTone offers the possibility to measure and register muscle tone accurately but non-invasively, as well as to compare a range of measurements. Optimal operation of the measuring instrument is guaranteed with a unique technique that makes contact with both flat and curved muscles, ensuring uniform pressure distribution across the electrodes. The product is compact and thanks to its user-friendly interface, measurements can be taken quickly and efficiently.



Timon De Munck
 supervisor: Chris Baelus
 co-supervisors: Steven Truijen & Sarah Michiels
Rehabilitation Sciences and Physiotherapy

MuTone

measuring instrument for increased muscle tone

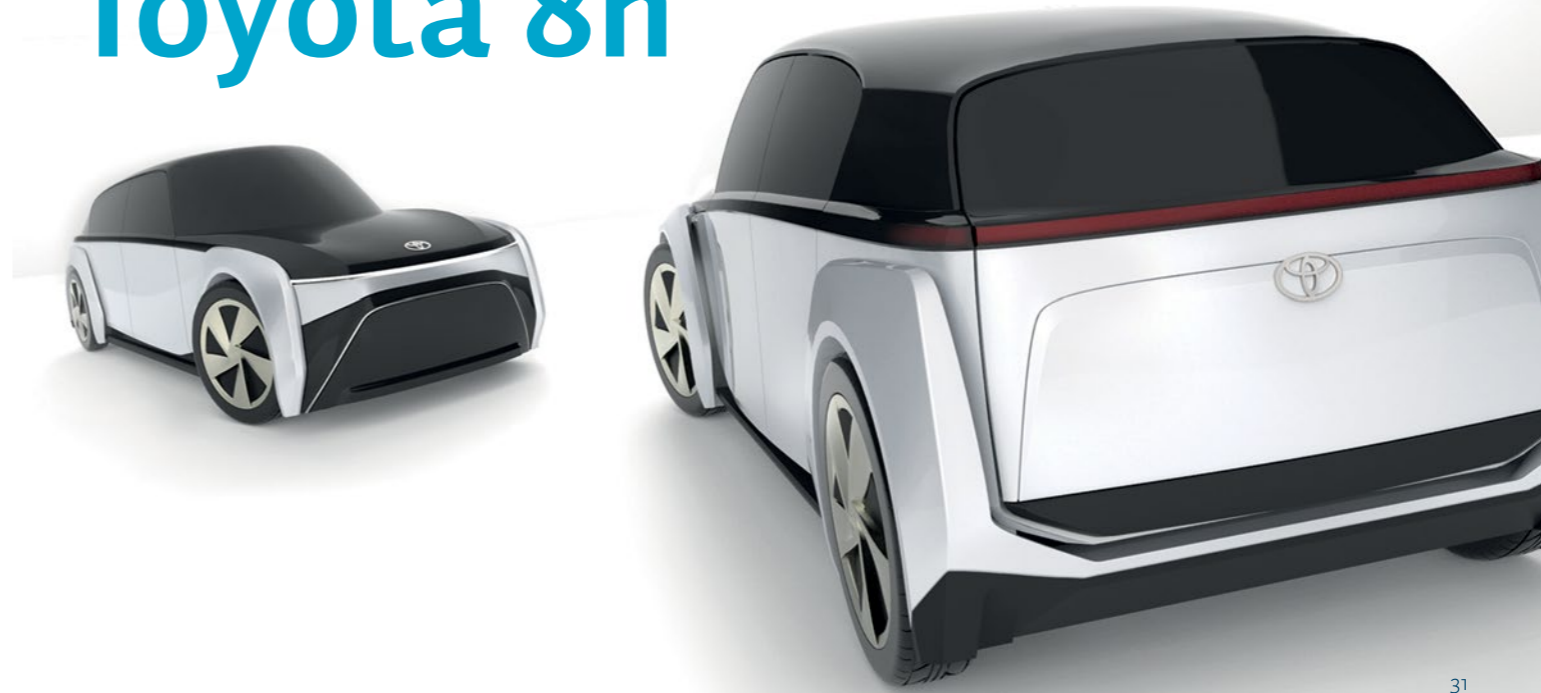


Emerging social and technological developments mean our cars are likely to undergo a transformation in the coming years. The Toyota 8n responds to what the user context may look like in the year 2050. Thanks to a range of innovative technologies, the electric 8n car is a worthy successor to petrol and diesel cars. By 2050, online energy networks will have done away with the need for gas and charging stations outside of the home. A communication network among vehicles and smart driving assistants enable the user to enjoy a safer, smoother ride. At the same time, the product experience is enriched by the adaptable car interior.

electric car for 2050

Reinout Muyllaert
 supervisor: Jan Van Goeij
 industrial supervisors: Konstantinos Gkagkas & Jonas Ambeck, Toyota Motor

Toyota 8n



Waxpert offers an all-round alternative to manually waxing winter sports equipment such as skis and snowboards. The traditional waxing method can cause burns, is time-consuming, labour-intensive and energy-inefficient and in many cases, uses excessive amounts of wax. This wax may consist of harmful components which then end up in the environment. The manual method can also cause damage to winter sports equipment. The limited space available in many rental apartments during ski holidays also hinders the user when waxing. Waxpert uses infrared technology and a unique distribution system to provide a safe, fast and efficient alternative in a compact format without compromising on quality.



Senne Van Rompaey
 supervisor: Linda Scheelen
 industrial supervisor: Peter Van Riet
 Studio Peter Van Riet

waxpert

high-quality portable
 waxing device for
 winter sports



The omnipresence of visual indicators in traffic is a big problem for the blind. The outside environment has become busier, more dangerous and less predictable due to increasing transportation, the rapid evolution of the city landscape and the lack of signage for the blind. This means blind and visually impaired people have less access to the outside world, and they become confined in their daily routines. Sonar Vision aims to improve mobility for the blind by helping them navigate, avoid obstacles and cross intersections. The device consists of two wristbands with vibrating actuators that help the user to avoid obstacles on pavements and to cross roads. The device has a 3D sonar system that provides 3D information about the area within a 180° radius.



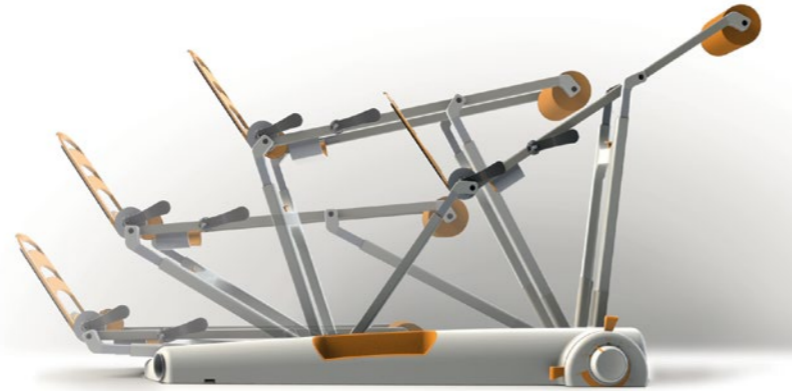
electronic travel aid
Sonar Vision
 for the blind

Wouter Maleux
 supervisor: Achiel Standaert
 co-supervisor: Dr. Ing. Jan Steckel,
 Centre for Care Technology

NOMINATION
 BEST OF PO
 2013



Mobilizo facilitates the movement of the lower limbs for bed-ridden patients. This helps the patient recover faster and maintain muscle mass, and also increases their general wellbeing. Thanks to mobilisation, the patient will be able to leave hospital earlier. The system allows patients to train for an extra 30 minutes every day, on top of the manual therapy they receive from a physiotherapist. Patients can use the device whether conscious or unconscious. If a patient is unconscious, he or she can train passively: the device will perform the movements for the patient. If the patient is conscious, he or she can boost the training level by training semi-actively or actively, by increasing the resistance. Mobilizo helps the patient with the exercise.



Annelies Sierens
 supervisor: Chris Baelus
 external supervisor: Tineke Moerbeek
 Antwerp University Hospital

early mobilisation Mobilizo in intensive care

Furthermore, the device can be adjusted to suit each patient. The angle at which the leg moves can be altered and two devices can even be used in tandem so that patients can train both legs. The physiotherapist is notified when the patient has a muscle contraction, so he or she can intervene if necessary. The patient is given information about the therapy via a patient key, which shows the remaining duration of the therapy and gives feedback on the quality of the therapy. All bed-ridden patients can enjoy the positive effects of using Mobilizo.



 WINNER
 USABILITY
 AWARD 2012



The eco-efficient design means that the environmental impact of the seat's entire life cycle is drastically reduced. Ninety percent of the materials used are recyclable or cradle-to-cradle, and disassembling the seating is quick and easy. This means that at the end of its life, Nio can be returned to the company in a profitable way and the product cycle is effectively closed thanks to reuse and recycling. In terms of production and transport, the main focus during the design stage was on dematerialisation, waste minimisation and efficiency in terms of working hours and energy. In addition, the lifespan of the seating is considerable, thanks to the timeless design, excellent seating comfort and modular concept.



Nio eco-efficient seating

Thomas Litière
 supervisor: Frank Goethijn
 industrial supervisor: Carl Meers, Indera

 NOMINATION
 BEST OF PO
 2013



Vaxintradermal II

During intradermal vaccinations, the vaccine is injected just between the dermis and the epidermis. The superior immunological properties of the skin ensure that only one tenth of the standard amount of vaccine is required. The device solves the problem of the Mantoux technique, a traditional method of intradermal vaccination which requires intensive training, is time-consuming and has a high failure rate.

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injection device for intradermal use



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The added value of the device is apparent in several areas. One of the main advantages is the protection it affords against needle-stick injuries. The needle is never visible and only protrudes from the device during the vaccination. This makes accidental needle-stick injuries almost impossible. A second major advantage is the limited pain sensation. Because of the small diameter and short length of the needle, the injection itself is not even felt in most cases. The speed and user-friendliness of the device are also of great value. The anti-reuse design ensures that the device can also be used safely in areas where the risk of reuse is real, e.g. because of a needle shortage. Furthermore, the limited cost, small volume and limited amount of antigen required all contribute to the uniqueness of the device.



Airia

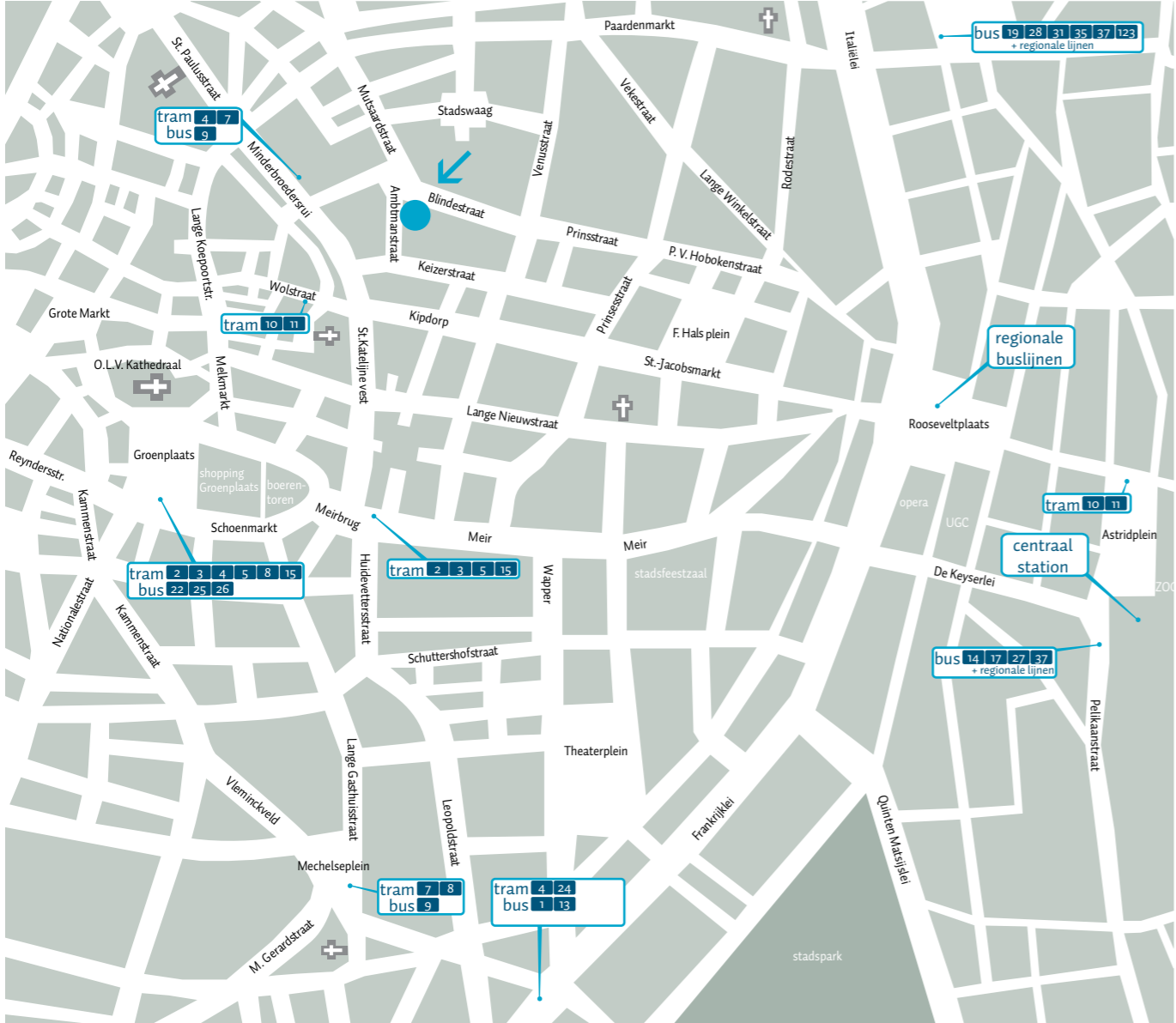
Sleeping environment for children with asthma

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Airia creates a conditioned sleeping environment in terms of air quality for children aged 0 to 4 with respiratory problems. Especially during the first years of childhood, exposure to harmful stimuli constitutes a major risk factor in the development or aggravation of asthma. Airia releases purified air through an air-permeable bed protector (open-cell structure) at low speed, thus cleaning the air around the entire bed continuously without undermining the child's natural thermoregulation system. Thanks to its modular design, Airia is available either as a total concept, in which the air purification module is integrated into a bed, or as a stand-alone module that can be combined with existing cribs with bars. Both versions include the open-cell bed protector. The bed protector (or other attachments used later) is attached to the module's air vent. The height of this vent can be adjusted thanks to a sliding system, as can the slatted base. This way, Airia grows with your child.



Antwerp city centre



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